



# Roadkill Observation and Data System (ROaDS) User Manual



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## Important Key Terms

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**Application (App):** refers to the Survey123 for ArcGIS software program owned by Environmental Systems Research Institute (ESRI). The App can be designed and written to fulfill a particular purpose of the user.

**Survey:** a programmed questionnaire (ROaDS) that fulfills this project's purpose, which is primarily to identify wildlife-vehicle collisions and areas where animals are near or crossing a road.

**WVC:** wildlife-vehicle collision

## Purpose and Usage of this Manual

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This manual explains how data collectors install the ROaDS survey onto a personal mobile device and offers guidance on how to use it, including:

- An overview of the survey questions
- Instructions on the approaches for answering each question
- Key information to include in survey responses to ensure quality data is collected
- Tips for entering survey responses to ensure that the information is understood by and useful to Agency managers

This manual is primarily intended for those who will be using the survey to document information about wildlife-vehicle collisions and animal movements near roads.

# What is the ROaDS survey?

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The National Park Service and US Fish and Wildlife Service have partnered with the Western Transportation Institute at Montana State University (WTI) to develop a wildlife-vehicle collision (WVC) data collection system for federal land management agencies (FLMAs) and their partners. Called the Roadkill Observation and Data System (ROaDS), it is designed to facilitate several key data collection needs:

- collect information (date, time, location, species) on large animal-vehicle crashes to address motorist safety concerns on FLMA roads,
- collect carcass data of medium- and smaller-sized animals relevant to FLMA's conservation missions, and
- identify existing highway sites where animals are being hit/killed by vehicles as well as where animals may be safely crossing by tracking live animals observed near or on/crossing a road.

Unlike a crowd-sourcing application, ROaDS is a user-friendly tool to accurately collect, manage, and evaluate data specific to the needs of NPS and FWS. The agencies can use the ROaDS data collected to identify road segments where countermeasures or other actions may be used to reduce WVCs and maintain safe wildlife movement across the road.

# Downloading Survey123

## DOWNLOADING THE APPLICATION

The WVC data collection system uses the Survey123 App on the ESRI ArcGIS platform. This platform allows users to upload a Survey123 data form onto a mobile device, collect data using this form on the mobile device in the field, store the data, and then analyze and view the data on a laptop or personal computer.

In order to use the ROaDS survey on a mobile device the ArcGIS Survey123 App must first be downloaded. The Survey123 App is free to install. To download the App, please follow these instructions:

1. Go to the App store for your mobile device.
2. Search for the App: *Survey123 for ArcGIS*.
3. Install the application on your mobile device by choosing the install button and waiting for it to fully download.



## ACCESSING THE ROaDS SURVEY FROM A MOBILE DEVICE FOR THE FIRST TIME

1. Open the Survey123 App.
2. Sign-in using your personal account login information provided by your agency's account. Contact your agency's ESRI administrator if this information is needed.

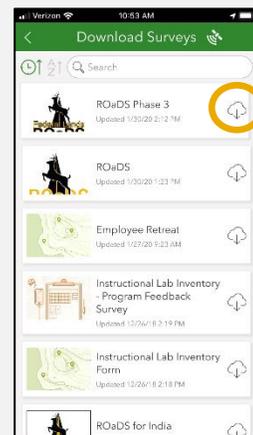
3. Go to the menu button on the top-right of the screen.



4. Click on the "Download Surveys" button.



5. Download (or update) the "ROaDS" survey and return to your *My Survey123* page.



# Using the ROaDS Survey

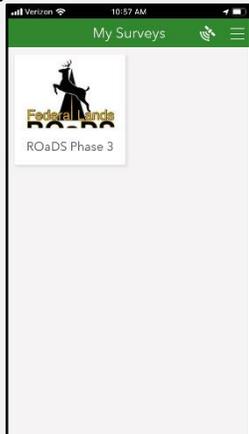
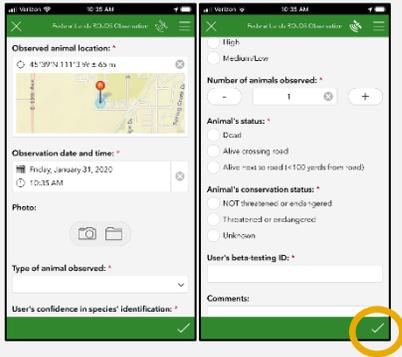
## Beta-testing ROaDS

There are several important roles that were established in the ROaDS survey, including owners, managers, and collectors. The current owner of the ROaDS Survey is WTI, the contractor managing the initial implementation of ROaDS for Department of the Interior agencies use. As the owner, WTI oversees all ESRI accounts; can make changes to the survey; and can collect, view, and edit data. Managers can collect, view, and edit data. Collectors can collect and view data.

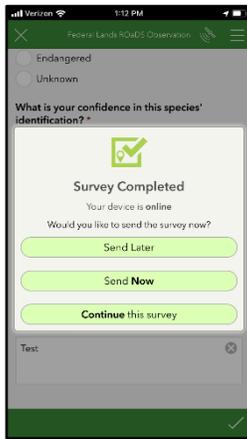
The ROaDS survey is currently housed in the “WVC at MSU” group on ArcGIS. To be able to view and download the survey, WTI will grant users access to the group. Each beta tester will receive a unique beta-testing ID, which will be used to identify the user’s observations.

The current arrangement with WTI implementing ROaDS will transition when bureaus within DOI assume management of ROaDS internally. At that point, each agency will identify an internal ROaDS owner and these manuals will be updated to guide agency users through the process of requesting access from the identified agency owners.

## Collecting Data

<p>1. After logging in to Survey123, the “My Surveys” page will appear. Click on “ROaDS” survey.</p> 	<p>2. Click on the “Collect” button at the bottom of the page to enter an observation.</p> 	<p>3. Fill in the survey and then click the check mark at the bottom of the page.</p> 
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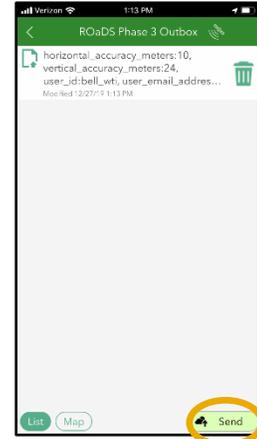
4. Data can be sent to the ESRI cloud after each observation or saved to send later when connected to WIFI.



5. If data is saved, it will appear on the initial ROADS Phase 3 homepage. Click on "Outbox" to access saved data.



6. Click on "Send" to send saved observations to the ESRI cloud.

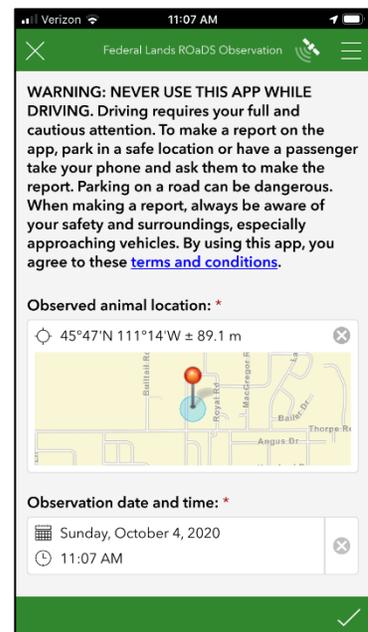


## Data Collection Tips

It is the responsibility of the individual user to understand what type of data is most vital to your refuge/park. Before you begin collecting data for the first time, contact your supervisor to discuss how the data are to be collected, including considering if observations will be recorded opportunistically or systematically, the amount of effort required, and guidance on data priorities. The manner in which the data are recorded affect the assumptions that are key to appropriate analyses and interpretation of the data; these study design considerations need to be documented and clearly communicated to people collecting the information in the field, as well as to the managers overseeing how the data are handled and analyzed.

### SAFETY

1. It is important to abide all traffic laws and never collect observations while operating a vehicle. If operating a vehicle, pull over to a safe location to enter observations. If stepping out of vehicle to get closer accurately record the location of the WVC observation, watch for traffic and wear appropriate personal protective equipment, including a safety vest, at a minimum.
2. Approach animals with caution as some may still be alive. If an animal is injured but still alive, contact your park biologist or law enforcement immediately and follow your unit's protocols for humane euthanization to minimize the animal's suffering.
3. If an animal may be in the road obstructing traffic, call for assistance to manage traffic while moving the animal or carcass off the road. If the animal is too large to move without risking injuring yourself, recruit other staff to assist in moving the animal to avoid injury.



4. If the carcass may be a bear attractant, follow your unit’s protocols for proper disposal of the carcass.

### ANIMAL LOCATION, DATE, AND TIME OF OBSERVATION

5. If the mobile device’s location service is enabled, the location will be established automatically when the user presses the “Collect” button in the ROaDS survey. If the user is not near the animal, or location service is disabled, click on the map to manually adjust the location of the observation. Selecting the location finder on the map in the top-left corner will record the latitude and longitude of the mobile device’s location.
6. The date and time will also be generated automatically based on the mobile device’s settings. If the data is entered later than the observation, click on the date and/or time to adjust it to the correct time of observation.

### PHOTO

7. One photo is allowed for each observation. Photos can help managers with quality assurance and identification of threatened and endangered species. Take photos of the animal in a way that will help with species identification (e.g. tail/antlers of a deer, head/feet of a bear, tail of feline, head of a canine, etc.). It may be useful to include an object for scale.

### TYPE OF ANIMAL

8. Select the animal species from the list provided. If a user can identify the genus, or the type of animal, and does not know the species, select the appropriate “Other” category, and then type “Unknown” in the text box.

### NUMBER OF ANIMALS OBSERVED

9. It is important to identify the number of animals that are observed at each location. The live crossing events are important to identify areas along the road where animals successfully cross, and where they are congregating near the road.

The screenshot shows the 'Federal Lands ROaDS Observation' mobile application interface. At the top, there is a status bar with 'Verizon' and '11:07 AM'. Below that is a green header with a close button (X), the title 'Federal Lands ROaDS Observation', and a menu icon (three horizontal lines). The main content area is white and contains several fields: 'Photo:' with a camera icon and a folder icon; 'Type of animal observed: \*' with a dropdown menu; 'User's confidence in species' identification: \*' with radio buttons for 'High' and 'Medium/Low'; 'Number of animals observed: \*' with a numeric input field showing '1' and minus/plus buttons; and 'Animal's status: \*' with radio buttons for 'Dead', 'Alive crossing road', and 'Alive next to road (<100 yards from road)'. A green bar at the bottom right contains a white checkmark icon.

### ANIMAL’S STATUS

10. If the animal is trying to cross the road but is hesitating, it should be identified as “Alive crossing road.” If animals are feeding or bedded down on the side of the road, it should be marked as “Alive next to the road.”
11. If an animal is alive, but injured next to the road, select “Alive next to Road” and type “Injured” in the comment box.
12. Multiple observations should be entered if there are alive and dead animals in the same location.

## ANIMAL'S CONSERVATION STATUS

13. Marking the animal's conservation status will help DOI managers identify and manage sensitive information within the data that is available for viewing. Users should not mark an animal as "Threatened or Endangered" unless they are 100% sure of the animal's status.

## USER'S AFFILIATION

14. The agency affiliation of those collecting the information can be helpful to DOI managers when they are conducting the data analysis so they can filter data appropriately.

## PURPOSE OF OBSERVATION

15. To help with filtering data, users can mark which type of observation is being collected. If users select "Monitoring program" or "Research project," a text box will be available to put in a specific ID that is used for those projects. This allows DOI managers to filter data for a specific project to look at the results specific to those efforts.

Verizon 11:07 AM  
Federal Lands ROADS Observation

**Animal's conservation status: \***

- NOT threatened or endangered
- Threatened or endangered
- Unknown

**User's affiliation: \***

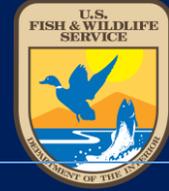
- National Park Service
- US Fish and Wildlife Service
- Other federal agency
- State agency
- Tribal agency
- Non-profit organization
- Other agency or organization
- Individual, unaffiliated

**Purpose of observation \***

- Random opportunity
- Crash information
- Carcass removal

## COMMENTS

16. This text box allows users to provide additional information to the DOI managers to help understand the circumstances better. If unique observations are observed, **adding an email address** can allow managers to contact users with more specific questions. This is important to do if users observe threatened or endangered species.



# Contact List

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## AGENCY CONTACTS

## PROJECT DETAILS

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